

CLAIMS

We claim

1. A tension imparting device comprising:
 - a housing having a plunger-receiving hole with an enlarged end portion;
 - a plunger slidable in said hole, extending through said enlarged end portion, and protruding therefrom in a protruding direction, for exerting a tensioning force against a traveling flexible transmission medium;
 - toothed racks formed on opposite sides of the plunger;
 - a protrusion biasing spring biasing the plunger in the protruding direction;
 - a cam-receiving ring fitted on the outside of plunger and disposed in said enlarged end portion of the plunger-receiving hole, said cam-receiving ring having a pair of grooves with oblique cam-engaging surfaces;
 - a spring, also disposed in said enlarged end portion, biasing the cam-receiving ring in said protruding direction;
 - a pair of wedge-shaped cam chips, also disposed in said enlarged end portion of the plunger-receiving hole, the cam chips being situated respectively in said grooves and engaged with, and slidable on, said oblique, cam-engaging surfaces of the cam-receiving ring, said cam chips having teeth engaged respectively with said toothed racks on opposite sides of the plunger;
 - a cam guide ring, fitted on the plunger, and also

disposed within the enlarged end portion of the plunger-receiving hole, for guiding and controlling disengagement of the pair of wedge-shaped cam chips from said racks;

a seal plate having a central opening slidably fitting the plunger, and sealing the biasing spring, the cam-receiving ring, the cam chips, and the cam guide ring, all of which are disposed in the enlarged end portion of the plunger-receiving hole; and

a plunger releasing mechanism, for temporarily holding the plunger in a retracted condition, and responsive to an external pressing force urging the plunger in a retracting direction opposite to the protruding direction, for releasing the plunger for protruding movement.

2. A tension-imparting device according to claim 1, in which said plunger releasing mechanism comprises a pin protruding laterally from the plunger, a loop-shaped retainer engageable with said pin, and a roll-shaped tube on the seal plate, said loop-shaped retainer being engaged with, and pivoted in, said roll-shaped tube, and movable from a first position, in which it engages said laterally protruding pin and thereby holds the plunger in its retracted condition, to a second position, in which it releases the plunger for protruding movement.

3. A tension-imparting device according to claim 2, in which said loop-shaped retainer is a resilient element

comprising first and second legs, in which the roll-shaped tube has tapered end surfaces in contact with said legs, in which said legs are urged against said tapered end surfaces by the resilience of said element, and in which the tapered end surfaces are tapered in directions such that forces exerted by said tapered end surfaces on said legs, urge the loop-shaped retainer from said first position toward said second position.

4. A tension-imparting device according to claim 2, in which said seal plate and said roll-shaped tube are formed as a unit from sheet metal.

5. A tension-imparting device according to claim 4, in which said roll-shaped tube forms a portion of a border of said central opening of the seal plate.